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Tamara Alcaraz

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Mingqi ZHAO et al.

Serial No.:

09/939,327

Filing Date:

August 24, 2001

For:

MICROFLUIDIC CHIP HAVING

INTEGRATED ELECTRODES

SUBMISSION OF DRAWINGS

Box Missing Parts Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

Enclosed are 19 sheet(s) of drawings in connection with the above-identified application.

Respectfully submitted,

Dated:

December/7, 2001

By:

Thomas E. Ciotti

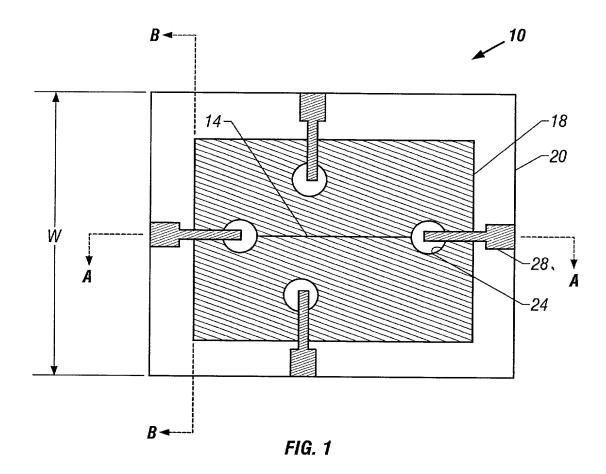
Registration No. 21,013

Morrison & Foerster LLP 755 Page Mill Road

Palo Alto, California 94304-1018

Telephone: (650) 813-5702 Facsimile: (650) 494-0792 ELECTRODES Inventor: Mingqi ZHAO et al. Application No.: 09/939,327 Docket No.: 427922000920

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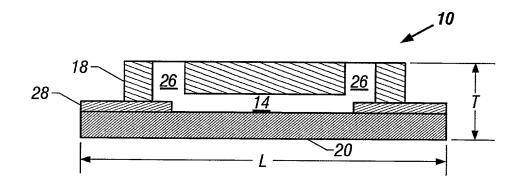


FIG. 2

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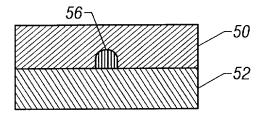


FIG. 3A

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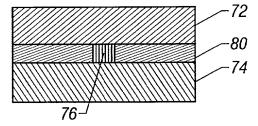


FIG. 3B

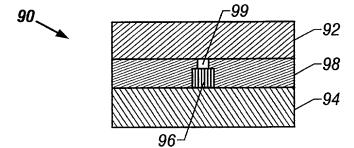


FIG. 3C

Title. MICROFLUIDIC CHIP HAVING INTEGRATED ELECTRODES

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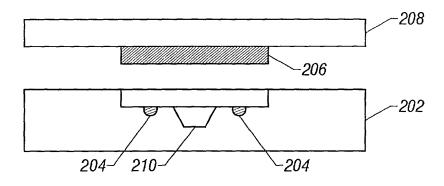


FIG. 4A

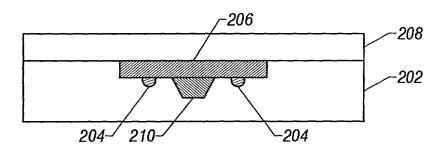
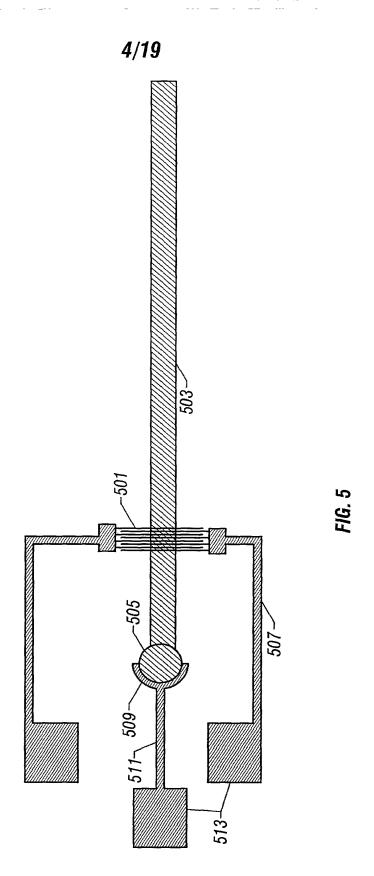


FIG. 4B

Title: MICROFLUIDIC CHIP HAVING INTEGRATED ELECTRODES
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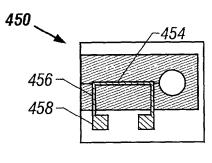


FIG. 6A

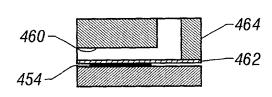


FIG. 6B

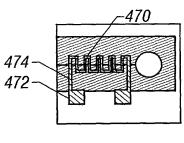


FIG. 6C

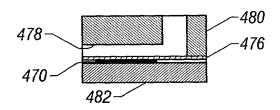


FIG. 6D

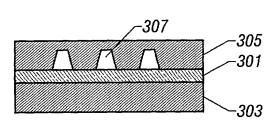


FIG. 7A

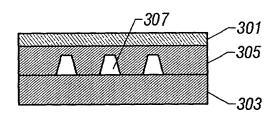


FIG. 7B

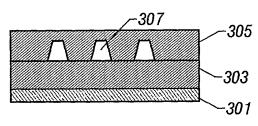


FIG. 7C

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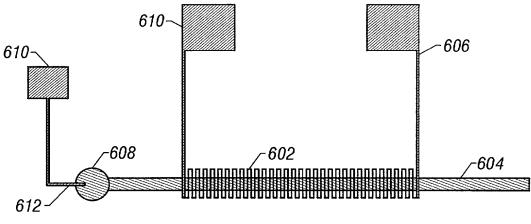


FIG. 8

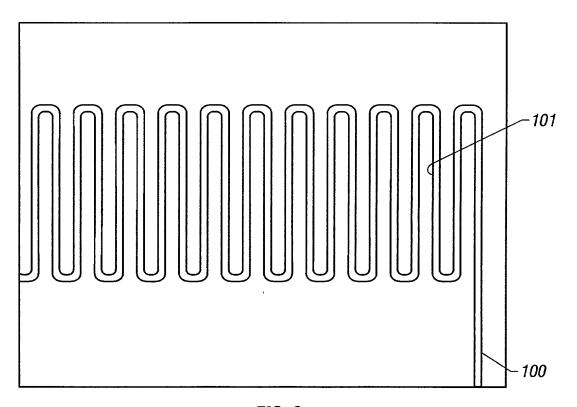
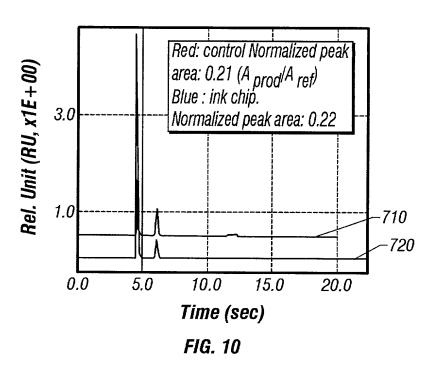


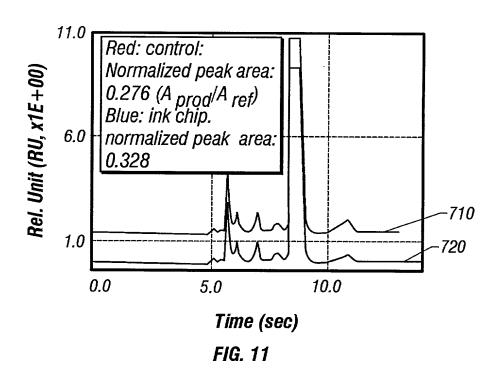
FIG. 9

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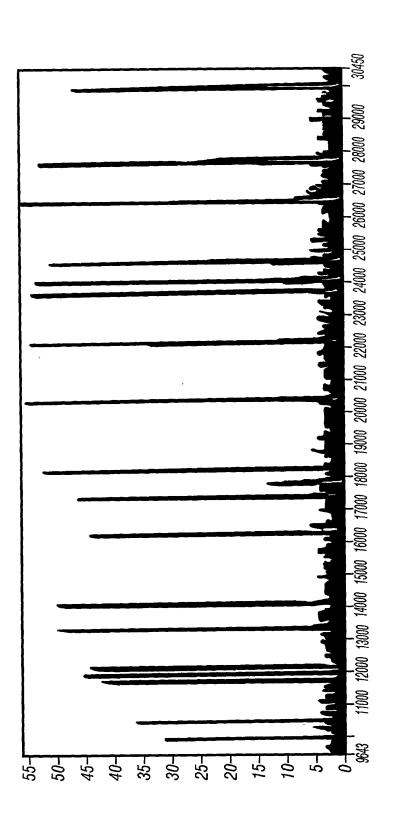


FIG. 12A

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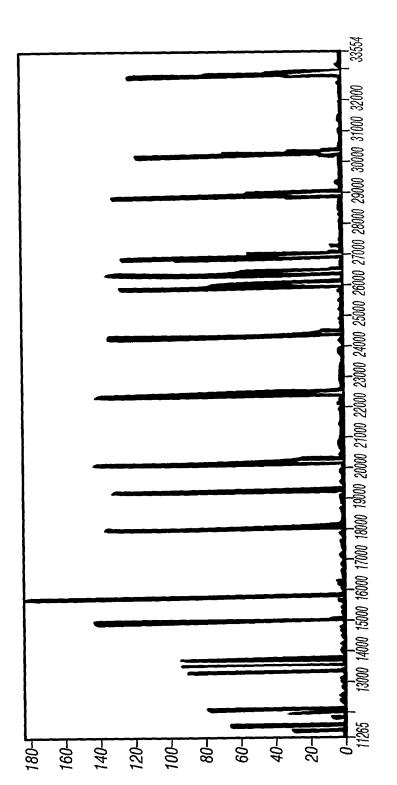
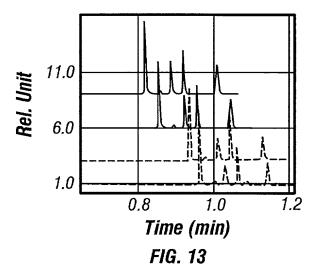


FIG. 121

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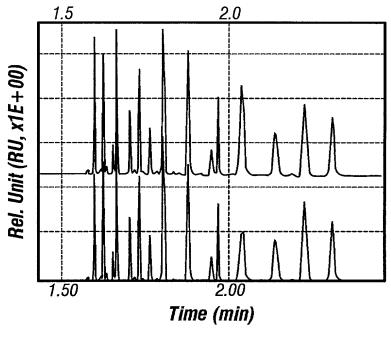


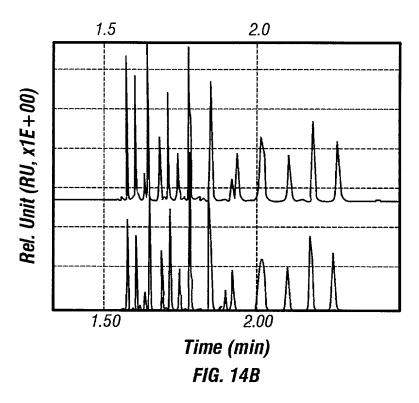
FIG. 14A

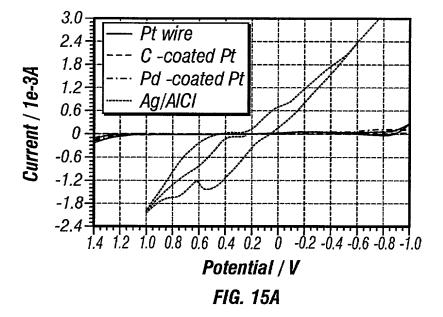
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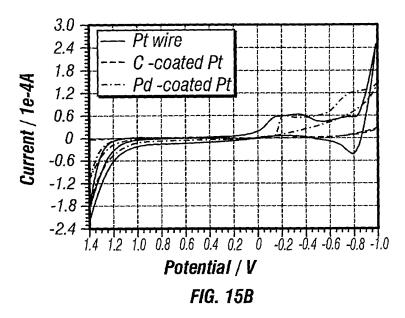
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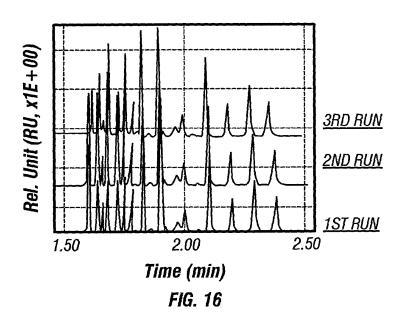




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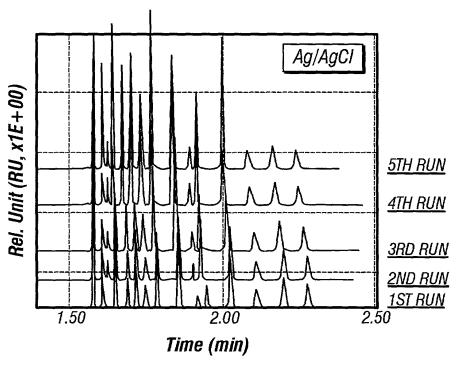


FIG. 17

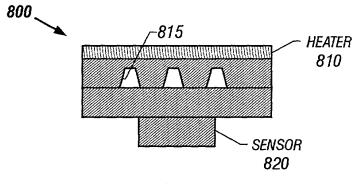


FIG. 18

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REPEATED UNIT HEATER, $R = 760\Omega$

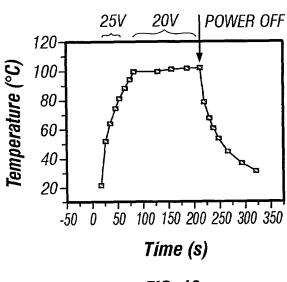
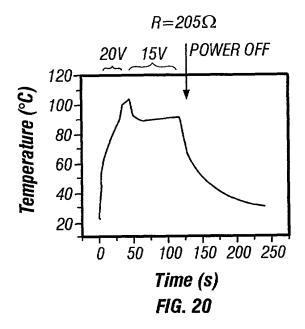


FIG. 19

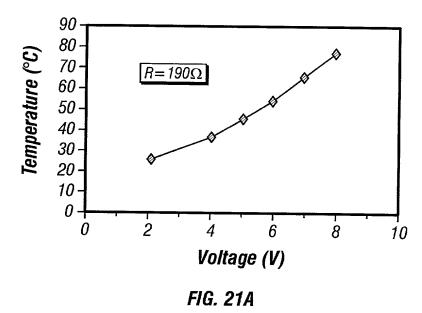


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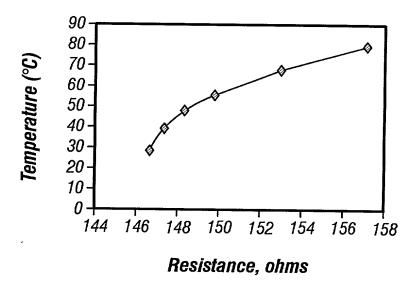


FIG. 21B

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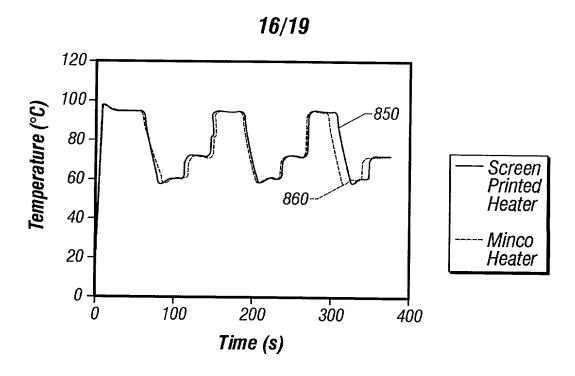
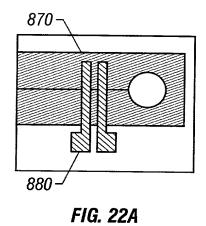
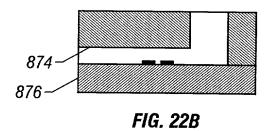


FIG. 21C





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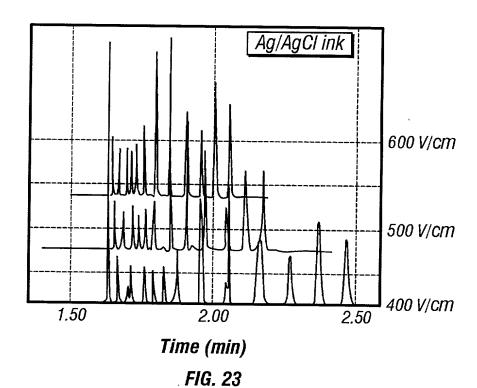
Title: MICROFLUIDIC CHIP HAVING INTEGRATED

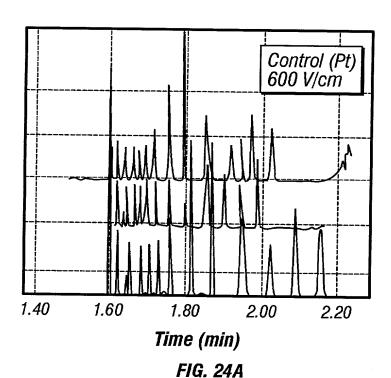
ELECTRODES

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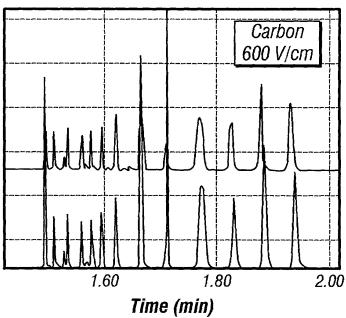


ELECTRODES

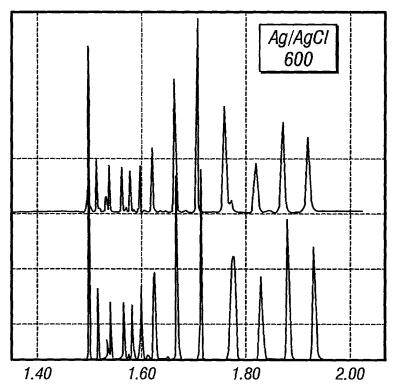
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Time (min) FIG. 24B



Time (min)

FIG. 24C

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	_								_	1	- т				
Resolution		Ink		0.70	1.18	1.30	1.44	0.30	13.70	90.0	9.03	6.73	6.52	0.27	2.93
	/10	Pt		25.92	19.80	27.73	13.48	44.60	70.08	63.05	33.52	30.19	47.68	45.94	29.69
	Average	Ink		0.81	1.08	1.04	0.89	0.86	0.81	1.14	1.07	1.03	1.00	1.04	0.92
	Ave	Pŧ		1.01	1.36	1.38	1.05	1.32	1.51	2.04	2.17	1.99	1.59	1.72	1.57
Half Peak Width		Ink	4.60	2.79	0.98	2.40	4.94	2.82	2.42	1.91	6.73	29.77	21.75	10.72	6.85
	10	Pt link	33.81	25.18	1.61 1.54 7.08 0.18 0.34 0.27 4.80 3.40 0.17 0.15 27.95 0.98 1.36 1.08 19.80 1.18	1.63 1.56 7.40 0.23 0.30 0.25 3.57 2.77 0.21 0.18 30.71 2.40 1.38 1.04 27.73 1.30	1.65 1.58 7.49 0.22 0.26 0.22 3.28 1.57 0.17 0.16 23.50 4.94 1.05 0.89 13.48 1.44	25.84	1.70 1.62 7.98 0.22 0.48 0.41 0.29 5.20 0.23 0.20 27.30 2.42 1.51 0.81 70.08 13.70	1.75 1.67 8.41 0.21 1.01 0.88 4.52 0.54 0.25 0.22 26.68 1.91 2.04 1.14 63.05 0.06	1.80 1.71 8.85 0.37 0.63 0.59 5.03 6.99 0.10 0.08 34.24 6.73 2.17 1.07 33.52 9.03	30.56	1.92 1.82 10.07 0.50 0.75 0.71 0.64 1.02 0.49 0.46 39.83 21.75 1.59 1.00 47.68 6.52	1.98 1.87 10.64 0.41 1.20 1.18 0.33 0.23 0.47 0.42 37.31 10.72 1.72 1.04 45.94 0.27	2.04 1.92 11.08 0.44 1.00 1.00 0.00 0 0.49 0.42 35.82 6.85 1.57 0.92 29.69 2.93
	Average	Ink	0.12	0.13	0.15	0.18	0.16	0.18	0.20	0.25	0.08	0.53	0.46	0.42	0.42
	Ave	Pt	0.15	0.15	0.17	0.21	0.17	0.20	0.23	0.25	0.10	92.0	0.49	0.47	0.49
Normalized Peak Height		Ink	4.74	2.45	3.40	2.77	1.57	2.37	5.20	0.54	6.99	1.25	1.02	0.23	0
	S	Pt	2.81	1.61	4.80	3.57	3.28	4.16	0.29	4.52	5.03	2.98	0.64	0.33	0.00
	age	ž	0.56	0.22	0.27	0.25	0.22	0.27	0.41	0.88	0.59	1.42	0.71	1.18	1.00
	Average	Pt	69.0	0.27	0.34	0.30	0.26	0.30	0.48	1.01	0.63	1.54	0.75	1.20	1.00
Migration Time (min)		Ink	0.19	0.19	0.18	0.23	0.22	0.22	0.22	0.21	0.37	0.72	0.50	0.41	0.44
	C	Pt	6.67	6.80	7.08	7.40	7.49	7.73	7.98	8.41	8.85	9.45	10.07	10.64	11.08
	Average	ž	1.50	1.51	1.54	1.56	1.58	1.60	1.62	1.67	1.71	1.77	1.82	1.87	1.92
	Aver	Pt	1.56 1.50 6.61 0.19 0.69 0.56 2.81 4.74 0.15 0.12 33.81 4.60	1.58 1.51 6.80 0.19 0.27 0.22 1.61 2.45 0.15 0.13 25.18 2.79 1.01 0.81 25.92 0.70	1.61	1.63	1.65	1.67 1.60 7.73 0.22 0.30 0.27 4.16 2.37 0.20 0.18 25.84 2.82 1.32 0.86 44.60	1.70	1.75	1.80	1.86 1.77 9.45 0.72 1.54 1.42 2.98 1.25 0.76 0.53 30.56 29.77 1.99 1.03 30.19 6.73	1.92	1.98	2.04
eTag Probes (-FC)			163	158	33	56	22	174	1	187	188	189	190	191	192

FIG. 25